Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A microfluidic detection device for examining a liquid sample, the device comprising

(a) an inlet having a first longitudinal axis;

(b) an outlet having a second longitudinal axis;

(c) a detection cell which

(i) comprises walls defining a conduit which is in fluid connection with the inlet and the outlet, and

(ii) has a third longitudinal axis, the third longitudinal axis being at an angle to the first longitudinal axis and at an angle to the second longitudinal axis;

(d) a first junction which lies between the inlet and the detection cell; and

(e) a second junction which lies between the detection cell and the outlet;

whereby a liquid sample can flow along a flow path successively through the inlet, the first junction, the detection cell, the second junction and the outlet;

the first junction including

(i) first junction walls, and

(ii) a first arm which, with the first junction walls, defines a first passageway of substantially annular cross-section through which the liquid sample flows as it flows from the inlet to the detection cell; and

the second junction including

(i) second junction walls, and

(ii) a second arm which, with the second junction walls, defines a second passageway of substantially annular cross-section through which the liquid sample flows as it flows from the detection cell to the outlet; and

the walls of the detection cell defining the conduit being composed of a ceramic material. ~~having one or more of the following characteristics (A)-(D):~~

~~(A) (a) the outer surfaces of each of the first and second arms form a cylinder having a first substantially constant diameter;~~

~~(b) the first junction walls form a cylindrical shell which (i) has a second substantially constant diameter which is larger than the first diameter, and (ii) with the outer surfaces of the first arm, defines a substantially annular region;~~

~~(c) the second junction walls form a cylindrical shell which (i) has the second substantially constant diameter, and (ii) with the outer surfaces of the second arm, defines a substantially annular region;~~

~~(d) the walls of the detection cell form a cylindrical shell having the second substantially constant diameter;~~

~~(B) the walls of the detection cell have an index of refraction which is higher~~

~~than the index of refraction of the fluid sample;~~

~~(C) the cell body is substantially transparent to selected wavelengths of light such that fluorescence, degenerate four-wave mixing, Raman or refractive index measurements can be taken through the cell body; and~~

~~(D) (a) the device comprises a substantially monolithic body including (i) an inlet channel, (ii) an outlet channel, (iii) a channel corresponding to the conduit, the first and second junctions, and extensions of the first and second junctions, and (iv) the conduit;~~

~~(b) the inlet comprises a first capillary tube which lies within the inlet channel;~~

~~(c) the outlet comprises a second capillary tube which lies within the outlet channel;~~

~~(d) a first elongate member lies within the extension of the first junction and extends into the first junction to provide the first arm; and~~

~~(e) a second elongate member lies within the extension of the second junction and extends into the second junction to provide a second arm.~~

2. (Original) A device according to claim 1 wherein the arms can transmit light to and from the detection cell.

3. (Original) A device according to claim 2 wherein the arms are substantially identical optical fibers.

4. (Original) A device according to claim 3 wherein the optical fibers have a substantially circular and constant cross-section having a first diameter, and the conduit has a substantially circular and constant cross section having a second diameter which is greater than the first diameter.

5. (Currently amended) A device according to ~~any one of the preceding claims which has characteristic (A) and~~ claim 1 wherein

(a) the outer surfaces of each of the first and second arms form a cylinder having a first substantially constant diameter;

(b) the first junction walls form a cylindrical shell which (i) has a second substantially constant diameter which is larger than the first diameter, and

(ii) with the outer surfaces of the first arm, defines a substantially annular region;

(c) the second junction walls form a cylindrical shell which (i) has the second substantially constant diameter, and (ii) with the outer surfaces of the second arm, defines a substantially annular region;

(d) the walls of the detection cell form a cylindrical shell having the second substantially constant diameter; and

(e) each of the substantially annular regions ~~passageways~~ has a length which is 1-40 times~~, preferably 4-10 times,~~ the first diameter.

6. (Currently amended A device according to claim 5 wherein the average width of each of the substantially annular regions ~~passageways~~ is 0.001 to 0.2 times~~, preferably 0.01 times to 0.05 times,~~ the first diameter.

7. (Currently amended) A device according to claim 1 ~~any one of the preceding claims~~ wherein the inlet, detection cell and outlet provide a generally Z-shaped flow path whose length is the same at all points along the cross-section of the flow path.

8. (Currently amended) A device according to claim 1 ~~any one of the preceding claims~~ wherein each of the inlet and the outlet is provided by a capillary tube having an outer diameter which is less than the inner diameter of the conduit.

9. (Currently amended) A method of preparing a device as claimed in claim 1 ~~any one preceding claims~~, the method comprising

(1) etching a first pattern onto a face of a first wafer, ~~preferably a fused silica wafer,~~ the first pattern comprising

(a) a trench having a substantially semicircular cross-section having a first longitudinal axis and corresponding to the inlet,

(b) a trench having a substantially semicircular cross-section having a second longitudinal axis and corresponding to the outlet,

(c) a trench having a substantially semicircular cross-section having a third longitudinal axis and corresponding to the conduit of the detection cell, the first and second junctions, and extensions of the first and second junctions;

(2) etching a second pattern onto a face of a second wafer, ~~preferably a fused silica wafer,~~ the second pattern being substantially a mirror image of the first pattern;

(3) securing the etched faces of the first and second wafers together so that the patterns are matched, thus forming a composite comprising channels corresponding to the inlet, the outlet, the conduit of the detection cell, and the first and second junctions and extensions thereof;

(4) securing capillary tubes in the channels corresponding to the inlet and outlet; and

(5) before or after step (4), positioning elongate members so that respective first longitudinal portions thereof are located respectively in the extensions of the first and second junctions and respective second longitudinal portions thereof are located respectively in the first and second junctions to provide the first and second arms.

10. (Currently amended) A method of examining a liquid sample from a μLC column which comprises passing the sample through a detection device as claimed in claim 1 ~~any one of claims 1-8~~, exposing the sample to light while it is in the detection cell, and examining a signal from the sample.

11. (New) A device according to claim 1 wherein the walls of the detection cell have an index of refraction which is higher than the index of refraction of the fluid sample.

12. (New) A device according to claim 1 wherein the cell body is substantially transparent to selected wavelengths of light such that at least one of

fluorescence, degenerate four-wave mixing, Raman and refractive index measurements can be taken through the cell body.

13. (New) A device according to claim 1 wherein

(a) the device comprises a substantially monolithic body including (i) an inlet channel, (ii) an outlet channel, (iii) a channel corresponding to the conduit, the first and second junctions, and extensions of the first and second junctions, and (iv) the conduit;

(b) the inlet comprises a first capillary tube which lies within the inlet channel;

(c) the outlet comprises a second capillary tube which lies within the outlet channel;

(d) a first elongate member lies within the extension of the first junction and extends into the first junction to provide the first arm; and

(e) a second elongate member lies within the extension of the second junction and extends into the second junction to provide a second arm.

14. (New) a device according to claim 5 wherein each of the substantially annular regions has a length which is 4-10 times the first diameter.

15. (New) A device according to claim 14 wherein the average width of each of the substantially annular regions is 0.01 times to 0.05 times the first diameter.

16. (New) A method according to claim 9 wherein each of the first and second wafers is a fused silica wafer.

17. (New) A method according to claim 16 wherein in step (3) the wafers are secured together to produce a composite in which the interface between the wafers has substantially disappeared.

18. (New) A method according to claim 9 which comprises, before steps (1) and (2),

(a) coating the faces of the first and second wafers with a protective layer of a material which will reduce defects in the etched channels,

(b) forming photoresists corresponding to the patterns on the protective layers;

(c) etching exposed portions of the protective layers,

(d) after step (1) and before step (3), removing the resists and the remainder of the protective layers.

19. (New) A method according to claim 18 wherein the protective layer is a layer of silicon 1000-3000 Angstroms thick.

20. (New) A microfluidic detection device for examining a liquid sample, the device comprising

(a) an inlet having a first longitudinal axis;

(b) an outlet having a second longitudinal axis;

(c) a detection cell which

(i) comprises walls composed of silica and defining a conduit which is in fluid connection with the inlet and the outlet, and

(ii) has a third longitudinal axis, the third longitudinal axis being at an angle to the first longitudinal axis and at an angle to the second longitudinal axis;

(d) a first junction which lies between the inlet and the detection cell; and

(e) a second junction which lies between the detection cell and the outlet;

whereby a liquid sample can flow along a flow path successively through the inlet, the first junction, the detection cell, the second junction and the outlet;

the first junction including

(i) first junction walls, and

(ii) a first optical fiber which has a first substantially constant diameter, the first junction walls forming a cylindrical shell which (a) has a second

substantially constant diameter which is larger than the first diameter, and (b) with the outer surfaces of the first optical fiber defining a substantially annular region through which the liquid sample flows as it flows from the inlet to the detection cell; and

the second junction including

(i) second junction walls, and

(ii) a second optical fiber which has the first substantially constant diameter,

the second junction walls forming a cylindrical shell which (a) has the second substantially constant diameter, and (b) with the outer surfaces of the second optical fiber, defines a second passageway of substantially annular cross-section through which the liquid sample flows as it flows from the detection cell to the outlet;

each of the substantially annular regions having a length which is 4-10 times the first diameter and an average width which is 0.01 to 0.05 times the first diameter.